

Defective Pixel Filtering for Digital Imagers

Defective pixels in a CMOS array give rise to spot noise that
5 diminishes the integrity of the resulting image. Because CMOS arrays and
digital logic can be fabricated on the same integrated circuit using the same
processing technology and relatively inexpensive and fast circuit can be
employed to digitally filter the pixel data stream and to identify pixels having
values that do not fall in the range defined by the immediately neighboring
10 pixels and the deviate from the neighboring pixels by more than a threshold
amount. Such conditions would indicate that the deviation is caused by a
defective pixel rather than by desired image data. The threshold amount
can be preprogrammed or can be provided by a user or can be dynamically
set using feedback indicating image quality. The filter would also provide a
15 solution for other sensors such as CCD, although a single chip solution
would likely not be possible.